Pretend Play, Coping, and Subjective Well-Being in Children
A Follow-up Study

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Researchers, the authors state, link play to cognitive and affective processes important for a child's development and overall well-being. In this article, the authors examine the relationships involving pretend play, coping, and subjective well-being (the last of which they conceptualize as positive affect—positive mood—and life satisfaction) and investigate the stability and predictive power of play skills. They report on a study in which they measured the pretend play, coping skills, positive affect, and life satisfaction of thirty girls in kindergarten through fourth grade and compared these measures to the girls' pretend play eighteen months earlier. They found that affect or emotional themes in play related to positive mood in daily life and that imagination and organization in play related to coping ability. Their results, they concluded, also support the stability of imagination and organization in pretend play over time. **Key words:** coping skills; divergent thinking; imagination in play; make-believe; organization in play; pretend play; subjective well-being

Research consistently demonstrates that, through play, children develop cognitive and affective processes important for overall functioning. Pretend play relates to and facilitates processes—divergent thinking, insight, imagination, and affect expression—relevant to creativity and creative problem solving (Dansky 1980; Fisher 1992; Moore and Russ 2008; Russ and Grossman-McKee 1990). As children learn to solve problems and think creatively, they cope better and improve their ability to adjust to life's situations (Christiano and Russ 1996). In addition, because play has an impact on the cognitive and affective processes important for development, it also has an effect on a child's subjective well-being. We conceptualize subjective well-being as a combination of life satisfaction and positive affect.

The study we present in this article, then, investigated and assessed the relationships involving pretend play, subjective well-being (i.e. the constructs of life satisfaction and positive affect [positive mood]), and coping. In addition,

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we investigated the predictive power of play—specifically, how play predicted subjective well-being, coping, and, later, play ability.

Pretend Play

Although play is, of course, a multidimensional construct with meanings that vary in different contexts (Cohen 2006), our study examined pretend play, also called imaginative play, make-believe play, fantasy play, and dramatic play. This type of play involves the use of fantasy, make-believe, and symbolism (Fein 1981). Pretend play possesses an element of "as if" —meaning that one thing represents or stands in for something else (Fein 1987). Udwin (1983) defines it as the ability to engage in play, to transform objects, and to use make-believe action (Udwin 1983).

In a review of the literature, Sandra Russ (2004) identified a number of cognitive and affective processes involved in play. Through play, children develop cognitive skills such as the ability to organize thoughts into a cause-and-effect sequence, to generate ideas, to solve problems, and to use symbolism. Cognitive processes in play also include divergent thinking—the ability to generate many solutions to a single problem (Russ et al. 1999), enhanced abstract thought (Saltz, Dixon, and Johnson 1977), and perspective taking (Youngblade and Dunn 1995; Fisher 1992). Further, Russ (2004) noted two broad affective processes—access to affect-laden thoughts and openness to affect states—that occur in pretend play. She suggested that in play, children access, learn about, and experience emotional thoughts and feelings. Additionally, through play, children learn to express and control affect, regulate emotion, and find pleasure and enjoyment in play and its creativity (Singer and Singer 1990). Empirical evidence suggests a significant relationship involving play, affect, and creativity, such that children who demonstrate greater affect in play perform better on divergent-thinking tasks (Lieberman 1977; Russ and Grossman-McKee 1990; Russ and Schafer 2006).

Further, some researchers believe that when children experience a sense of control over the amount and pace of affect expression, as they do in play, both positive- and negative-affect expressions may be adaptive. In other words, negative-affect expression in play does not necessarily correspond to a negative-mood state (Singer and Singer 1990). These experts argue that through play, children develop and regulate these affective processes, by practicing both positive- and negative-affect expression, which leads to more adaptive functioning.

Play and Coping

Some researchers have found that pretend play relates to coping ability (Christiano and Russ 1999; Russ, Robins, and Christiano 1999). Others assume that the cognitive processes involved in play—such as divergent thinking, the ability to transform one object into another (i.e. pretend that a block is a tree), and the organization of narratives—demonstrate the relationship between play and coping (Singer and Singer 1990; Russ 2004). Folkman and Lazarus (2003) devised a widely accepted definition of coping. They suggested that coping refers to the "cognitive and behavioral efforts made by individuals to master, tolerate, or reduce" (223) stressful demands when "a routine or automatic response is not available" (Monat and Lazarus 1977, 8). In other words, coping refers to an active process of generating solutions to real-life problems, such as a real-world application of a divergent thinking. Research has demonstrated the direct link between divergent thinking and coping (Russ 1988; Carson et al. 1994).

Curry and Russ (1985) further emphasized the importance of cognitive development in their assessment of the cognitive and behavioral coping strategies used by children in preparation for and during a restorative dental treatment. Typical children tended to use several different forms of coping, which supports Murphy's observation (1962) that coping strategies are the actual thoughts or efforts individuals use to deal with a problem (Curry and Russ 1985). Further, older children used more cognitive strategies—thinking and talking to oneself—and fewer behavioral ones, such as actively doing something to help oneself feel better (Curry and Russ 1985), suggesting the importance of adequate cognitive development for successful coping (Singer and Singer 1990). The complex cognitive structures developed in play facilitate a child's active coping and expressing of emotion. Through play, a child makes sense of the threatening experience (Freedheim and Russ 1992) and experiments with solutions (Hartley, Frank, and Goldenson 1952). Haight and others (2006) suggested that play facilitates a child's learning about emotions. They further theorized that through play, adults are also able to learn about the way a child feels. They demonstrated how children learn about emotions and how to deal with these emotions through play, finding that traumatized children use pretend play with their mothers to work through the effects of stress.

Several empirical studies demonstrate the direct link between coping skills and pretend play as measured by the Affect in Play Scale (APS; Russ 2004), which involves puppet play. Christiano and Russ (1996) found a positive relationship

between play and coping in children undergoing an invasive dental procedure. Children who were considered good players (i.e. those who expressed affect and fantasy in their play) were also good at cognitive coping. These children frequently used better coping strategies and shifted flexibly to different strategies during the dental procedure compared to those who expressed less affect and fantasy in their play. Christiano and Russ also found a negative relationship between play and distress—children who were considered better players also evidenced less distress during the dental procedure.

In a longitudinal study, Russ, Robins, and Christiano (1999) found that imagination in play predicted the number and quality of coping responses on the School Coping Scale, a measure designed especially to assess a child's coping skills. Specifically, children with high imagination in their play reported using a greater number of coping strategies in stressful situations four years later. Finally, Goldstein and Russ (2000–2001) found that pretend play and fantasy related to coping strategies. Children who demonstrated more imagination and fantasy in their play generated a greater number and variety of coping strategies when thinking about what to do in a situation that required control of impulse and aggression.

Subjective Well-Being

Many researchers think well-being is subjective because it depends on the individual's assessment of the quality of his or her own life (Lee and Browne 2008). They commonly conceptualize subjective well-being as having three components: global-life satisfaction, positive affect, and negative affect (Land et al. 2007; Diener et al. 1999). We examined global-life satisfaction and positive affect. Global-life satisfaction, the cognitive component of well-being, refers to an individual's evaluation of his or her life as a whole—how satisfied he or she is with major aspects of life, such as school or work, home, family, and friends.

There also exists an affective component to well-being, which includes the pleasant and unpleasant emotions an individual attaches to various experiences (Lee and Browne 2008). More specifically, well-being involves the frequency of positive emotions, such as joy and pride, and the frequency of negative emotions, such as anger and sadness. For example, a widely accepted scale of the affective component of subjective well-being is the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, and Tellegen 1988). The scale is based on a model

that defines positive affect as "high energy, full concentration, and pleasurable engagement" (1063), so that more positive affect is associated with greater subjective well-being. Watson and his colleagues discussed the robustness of the PANAS across time, suggesting the measure can be effectively used—depending upon the instruction—as both a momentary and a longer-lasting indication of mood. The version included in our present study instructs children to evaluate their moods over the previous two weeks, which theoretically provides an indication of mood beyond a snapshot and more closely resembles a longer-lasting mood (Laurent et al. 1999).

Subjective well-being in adults has been well researched in recent decades, but it has not been studied much in children (Moore and Russ 2008). Through a series of factor analyses, however, Huebner and his colleagues found that constructs of life satisfaction and positive affect also exist in children (Huebner 1991) and adolescents (Huebner and Dew 1996). Only recently, researchers developed standardized measures of these constructs for children (Huebner 1991, 1994).

Although few studies have directly examined the relationship between pretend play and subjective well-being, the two constructs are theoretically related. Research consistently demonstrates that pretend-play skills are related to constructs such as divergent thinking, coping ability, creativity, adjustment, and the regulation of emotion (Russ and Grossman-McKee 1990; Dansky 1980; Hoffmann and Russ 2012). We might speculate that children who possess these skills would also likely enjoy more positive moods and be more satisfied with life. In other words, we can imagine that children who more effectively cope with life's difficulties and appear better adjusted overall would also rate themselves as happier and would generally evaluate their friends, family, school, work, and home life as more satisfying. In support of this assumption, Udwin (1983) found that pretend play related to overall positive affect.

Although few studies have specifically examined positive moods, several studies have demonstrated the relationship between play ability and the lack of distress, including a lack of distress following surgery (Burstein and Meichenbaum 1979) and a lack of distress during dental procedures (Christiano and Russ 1996). Additionally, Grossman-McKee (1990) found that first- and second-grade boys who expressed greater affect in their play had fewer complaints about pain and were less anxious than those children with less affect in their play. In other words, children considered better players because they expressed more affect in play tended to feel better and demonstrate less negative affect in daily life.

These studies suggest that such children would also rate themselves as having a more positive mood in daily life, although they did not explore this direct link.

Based on the previous links between pretend play and constructs important for development, we also theorized that children who are considered better players, or who express greater imagination and affect in play, would also demonstrate greater overall positive affect in daily living and be more satisfied with life.

Summary

Previous research found significant relationships between play ability and other constructs important for overall functioning. Evidence suggests that children who have more imagination and affect in their play tend to cope more effectively and to succeed more often at solving problems. They are also generally better adjusted and more creative than children who express less imagination and affect in their play. Given that children who express more imagination and affect in play are more creative, better adjusted, and cope more effectively, we theorized that they would also prove more satisfied with life and demonstrate greater positive mood. Previous literature suggests that significant relationships exist among play ability, coping skills, and subjective well-being (the latter being conceptualized as life satisfaction and positive affect) that are worth further investigation. Our present study, the first to examine directly the relationships of all these variables, hypothesizes that play skills would significantly relate to concurrent measures of coping ability and subjective well-being. In addition, we explored the predictive power of play by examining its relation to coping and subjective well-being over time and hypothesized that early play ability would significantly relate to these constructs over an eighteen-month period. Finally, our present study examined the stability of play and predicted that play skills would be stable over time.

Method

Participants

We began with a sample of sixty-one subjects, but thirty girls in grades one through five participated in all components of our study. The children attended a private school for girls with a predominately Caucasian population. To obtain a follow-up sample, we sent recruitment letters to the parents of all the sixty-one girls who participated in our original study examining the effects of an

intervention on play ability. Of the sixty-one children, 49.2 percent agreed to take part in the follow-up study.

Procedure

At baseline in the original study, the sixty-one participants completed the Affect in Play Scale, a five-minute puppet play task, and the School Coping Scale (SCS), a measure that asks children to suggest coping responses to potentially stressful situations. These participants also completed the vocabulary subtest of the Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV) to assess verbal ability.

The follow-up assessment occurred approximately eighteen months after the baseline assessment. Each of the thirty participants in our follow-up study met with the examiner for a twenty-five-minute session. The examiner was blind to the original play scores. The assessment included two of the original baseline measures, the Affect in Play Scale and the SCS, in addition to the Multidimensional Student Life Satisfaction Scale for Children (MSLSS-C) and the Positive and Negative Affect Schedule for Children (PANAS-C). Each participant completed the measures in the same order: Affect in Play Scale, PANAS-C, MSLSS-C, and, finally, the SCS. We did not administer the play task to students in the fifth grade as it was designed for younger children.

Measures

Affect in Play Scale. The five-minute play task is a standardized instrument designed to assess affect and imagination in play in children ages six through ten. The activity uses two puppets depicting a boy and a girl and three small blocks of different shapes and colors. Children perform the task individually, and each receives the same instructions from the researcher: "I'm here to learn about how children play. I have here two puppets and would like you to play with them any way you like for five minutes. For example, you can have the puppets do something together. I also have some blocks that you can use. Be sure to have the puppets talk out loud. I'll tell you when to stop. Go ahead, put the puppets on, and start."

The Affect in Scale-Brief Rating Version (APS-BR) (Cordiano, Russ, and Short 2008), adapted from Russ's (1993) original video-taped version, allowed the examiner to score the play as it occured without relying on video-taped presentations. Our study used the brief-rating version of the play task. We used four scales of the measure: frequency of affect, organization, imagination, and

comfort. We scored each aspect of play on a four-point Likert scale. The organization score, a cognitive component of the scale, measures the quality of the plot and the complexity of the story within the play. The other cognitive component, the imagination score, refers to the child's ability to pretend and use fantasy in play, use blocks to represent different things, and demonstrate novelty in the play. The frequency of affect score refers to the amount of emotion and emotional themes expressed during the play based on the number of displays of emotion during the task. We coded positive affective expressions, such as happiness and nurturance, and units of negative affect, such as aggression, sadness, and frustration. For example, we coded "Whee! This is fun!" as positive affect and "Ahh! The monster is chasing me!" (an expression of fear) as negative affect. The comfort scale indicates the child's level of comfort and enjoyment in play.

The APS-BR correlates highly with the video-taped version, which has good reliability and validity. Correlations for the main scores range from .75 to .92, which suggests that the two scales measure similar elements of play and that the validity studies for the APS should apply to the APS-BR. Further, interrater reliability, or the degree of agreement between raters, for the APS-BR has been good, ranging from .62 to .94 (Cordinao, Russ, and Short 2008). Finally, the APS-BR has been shown to relate to levels of creativity and emotional memories, which supports its validity. We calculated interrater reliability of the APS-BR for our study by comparing the examiner's ratings to another observer's ratings on twenty participants. Because we did not have twenty videos of the APS-BR for participants of our sample (eighteen months later), we used twenty videos from a previous sample. Although we used video tapes, the rater viewed each video only one time to simulate the brief-rating experience. Correlation coefficients for the reliability between raters were: .71 for organization, .78 for imagination, .92 for frequency of affect, and .94 for comfort. With the exception of organization, which is considered good reliability, these values exceed Cicchetti's .75 guideline for excellent reliability (Cicchetti 1994).

The School Coping Scale. The School Coping Scale is a ten-item self-report instrument that assesses how children deal with potential problems in school settings. The scale asks children to list what they would do in ten stressful situations. For example, they were asked, "What would you do if you were going to be late to school?" and "What would you do if your best friend didn't want to play with you anymore?" Sample responses to the latter included: "play with another friend," "ask her what's wrong," and "ignore her." We scored the

measure for frequency, so the score indicated the total number of acceptable coping responses generated. For our study, interrater reliability using Pearson correlations was: r = .92 for the frequency of coping responses. This value exceeds Cicchetti's guideline for excellent reliability (Cicchetti 1994). In a previous study, the frequency of coping responses on the School Coping Scale positively related to imagination and fantasy in play (Russ, Robins, and Christiano 1999).

Positive and Negative Affect Schedule for Children. The PANAS-C (Laurent et al. 1999) is a thirty-item self-report scale using direct questioning and designed to assess affect—recent experiences of positive and negative moods—in children. The PANAS-C was originally validated for children in grades four through eight but was adapted for younger children by Moore and Russ (2008). Our study used the adapted version, which altered the language for two of the items (i.e. "energetic" to "lots of energy") and removed three difficult ones (i.e. "disgusted," "daring," and "delighted"), resulting in a twenty-seven-item measure (Moore and Russ 2008). In our study, we analyzed only the positive-affect score. The original PANAS-C has good reliability and validity; its reliability alpha coefficients range from .89 to .94 for the two affect scores (Laurent et al. 1999). Convergent and divergent validity for the PANAS-C has also been demonstrated. Laurent and others found the positive-affect scale correlated negatively with the Children's Depression Inventory. The adapted version of the PANAS-C has minimal reliability and validity data, given its limited use. For our study, internal consistency was .77, which Cronbach (1951) considered acceptable.

The Multidimensional Student Life Satisfaction Scale for Children. The MSLSS-C (Huebner 1991, 1994) assesses life satisfaction, one component of subjective well-being. The scale was originally created and validated for children in grades three and above (Huebner 1991; 1994). Our study used the adapted version, devised by Moore and Russ (2008). Moore and Russ removed six of the forty original items that contained more advanced vocabulary and changed some of the language to be more developmentally appropriate. For example, "My parents treat me fairly" was removed, and "I wish there were different people in my neighborhood" was changed to "I wish I had different neighbors." The MSLSS-C assesses how satisfied children feel with different areas of their life, including family, friends, school, living environment, and themselves. The scale asks children to rate how they feel about each statement by selecting circles of varying sizes on a 1–4 scale.

The original MSLSS scale has good validity and reliability, with a total score alpha of .92 and alphas for the subscale scores ranging from .78 to .83 (Huebner 1994). The reliability and validity of the original MSLSS scale has been demonstrated with a middle-school sample of 291 students (Huebner et al. 1998). Validation studies support the use of the total score as an indication of general life satisfaction (Huebner et al. 1998). Therefore, we used the total score in our study. The adapted version of the scale has minimal reliability and validity data, given its limited use. For our study, internal consistency for the total score was .88, which Cronbach (1951) considered good.

Results

We used Pearson product-moment correlations to examine the relationship of play ability, subjective well-being, and coping skills at the beginning of the study and again eighteen months later. We used an alpha level of .05, unless otherwise noted. We also reported effect sizes. According to Cohen (1988), correlation coefficients of .10 are small, those of .30 are medium, and those of .50 are large.

Also, we used repeated measures analysis of variance (ANOVA) to assess the effect of the original intervention when controlling for baseline play differences. The repeated measures ANOVA confirmed there were no significant group differences across any variables. Therefore, we combined the groups for all analyses.

We checked the data for skewness (lack of symmetry) and kurtosis (the measure of how peaked or flat the data are relative to a normal curve). We found no significant differences from normal and deemed neither skewness nor kurtosis to be a pervasive problem in these data. Therefore, we made no further adjustments.

There were several participants without data for the play task, resulting in twenty-three children in the study with play data. Of the thirty-participants, two did not wish to participate in the play task. In addition, the APS-BR has only been validated for children ages six to ten, thus children in the fifth grade did not complete the play task. Further, twenty-nine of the thirty participants in the follow-up study completed the play task at the beginning of our study. Thus, longitudinal relationships determined in our study are based on a sample of twenty-nine participants. All thirty participants completed the MSLSS-C, the PANAS-C, and the School Coping Scale.

We compared beginning or baseline scores of our follow-up sample to baseline scores of the total sample using standard t-tests. We found no significant differences between the two groups on the baseline measures of play, coping, and verbal ability, indicating the follow-up sample is representative of the total sample on measures of play and coping abilities.

Descriptive Statistics

At the time of the follow-up, participants ranged in age from 6.6 years to 11.2 years, making a mean age of 8.9 years. Participants were in first through fifth grade, and the number of participants in each of the five grades was eight participants in kindergarten, eight in first grade, four in second grade, five in third grade, and five in fourth grade. We examined Pearson product-moment correlations among age, grade, and measures of well-being and coping. None of the measures related to either grade or age. Given this, we would not expect differences in the relationships of the measures across age groups or grade levels.

Descriptive statistics, including means, standard deviations, and ranges, for all measures appear in figure 1. The results indicate adequate variability among players and are similar to those found in the previous validation study for the APS-BR (Cordiano, Russ, and Short 2008).

Verbal ability. We used scores on the vocabulary section of the WISC-IV at the beginning of the study to record verbal ability. The participants had a mean score of 12.27 (SD = 2.70), with a range of 7.00 to 17.00. The WISC-IV has a standardized mean of ten and a standard deviation of three. Thus, our sample scored slightly above average and had a wide range of scores. None of the measures significantly related to verbal ability. Nevertheless, to control for verbal ability, we partialed WISC-IV scores out of each of the analyses.

Main Hypotheses

Concurrent relationships. We found several significant relationships involving play, coping, and subjective well-being (see figure 2). First, as hypothesized, organization and imagination scores on the APS-BR positively related to coping responses ($r = .38$, $p < .05$; $r = .34$, $p = .05$, respectively). Children who demonstrated greater organization and imagination in their play generated a greater number of coping responses. According to Cohen (1988), the effect sizes of these relationships are medium, suggesting meaningful relationships between the variables.

APS-BR Variable (n = 23)	M	SD	Range
Organization	2.87	0.97	1–4
Imagination	3.00	1.00	1–4
Frequency of affect	2.83	1.11	1–4
Comfort	3.52	0.79	1–4

Well-Being Variable (n = 30)	Measure (Score)	M	SD	Range
Life satisfaction	MSLSS-C (Total)	111.23	12.19	87.0–134.0
Positive affect	PANAS-C (Positive affect)	45.83	8.09	26.0–62.0
Coping	School Coping Scale (Frequency score)	11.6	2.58	7.0–20.0

Figure 1. Descriptive statistics for current measures

Second, the frequency of affect score on the APS-BR positively correlated with the positive affect score on the PANAS-C, $r = .39$, $p < .05$. As predicted, children who demonstrated greater overall affect in their play also rated themselves as having greater positive affect in daily life. According to Cohen, the effect sizes of these relationships are considered medium.

Third, inconsistent with our hypotheses, life-satisfaction scores did not relate to imagination or organization but correlated negatively with the frequency of affect score, $r = -.36$, $p < .05$. Unexpectedly, children who demonstrated less affect in their play rated themselves as having higher life satisfaction.

Additionally, results indicated a significant relationship of medium effect size between frequency of coping and positive affect on the PANAS-C, $r = .38$, $p < .05$ ($n = 30$). This correlation suggests that children who generated a greater number of effective coping responses reported greater positive affect.

Finally, when we controlled for verbal intelligence, all coefficients remained unchanged.

Longitudinal relationships. We also examined relationships among baseline play and coping and subjective well-being at our eighteen-month time point (see figure 3). The baseline imagination scores on the APS-BR significantly correlated with the frequency of coping responses after eighteen months, $r = .34$, $p < .05$, which remained unchanged when we controlled for verbal intelligence. Children who demonstrated greater imagination in their play at baseline generated a greater number of coping responses at outcome, approximately eighteen months later. The association between play and coping remained stable over time. When we controlled for baseline coping, the correlation was no longer significant ($r = .21$), but the magnitude of the correlation was a small effect size (Cohen 1988). Thus, baseline coping ability accounted for a portion of the variance but did not account for the entire relationship.

In addition, several relationships yielded correlation coefficients that approached significance, such as baseline organization in play and frequency of coping responses, $r = .27$, $p = .15$; and the baseline frequency of affect in play and positive affect on the PANAS-C, $r = .24$, $p = .20$. As with the concurrent relationships, the effect sizes are considered medium (Cohen 1988). It is possible that these relationships would reach significance with a larger sample size. Importantly, the pattern and magnitude of the correlations were similar to those among the concurrent relationships, which suggests the associations were maintained over time.

Well-being variables	Affect in Play Scale variables			
	Organization	Imagination	Frequency of affect	Comfort
Life satisfaction				
MSLSS	-.16	-.22	-.36*	-.25
Positive affect				
PANAS: pos	.24	.26	.39*	.20
Coping				
Frequency of effective responses	.38*	.34*	.30	.09

n = 23

*p ≤ .05

Figure 2. Concurrent Pearson product-moment correlations among APS-BR and well-being variables

Well-being variables (18-month later)	Affect in Play Scale variables: Baseline			
	Organization	Imagination	Frequency of affect	Comfort
Life satisfaction				
MSLSS	.04	.02	.08	.06
Positive affect				
PANAS: pos	.12	.14	.24	.24
Coping				
Frequency of effective responses	.27	.34*	.01	.13

n = 29
*p < .05

Figure 2. Longitudinal Pearson product-moment correlations among baseline APS-BR and well-being variables at 18 months

Stability of play. The magnitudes of the correlations between baseline play ability and current measures of play ability according to the APS-BR suggest the stability of the cognitive components of play, imagination, and organization. Baseline organization and imagination scores were significantly related to the organization and imagination scores recorded eighteen months later, $r = .58$, $p < .01$, $r = .46$, $p < .05$, respectively. Similarly, baseline comfort in play significantly related to outcome comfort ($r = .46$, $p < .05$). According to Cohen's (1988) effect size criteria, these values are deemed large effect sizes, indicating stable relationships between these variables. However, the magnitude of the correlation between the baseline frequency of affect score and its respective outcome score is considered small ($r = .26$, $p = .25$), suggesting affect is less stable than the cognitive components of play. Finally, when we controlled for verbal intelligence, coefficients remained unchanged.

Exploratory Analyses

Stability of coping. Exploratory correlational analyses suggest the stability of coping ability. Specifically, the frequency of effective coping responses at baseline related to the same measure at the end of the study, $r = .56$, $p < .01$; and it was unaffected when we controlled for verbal intelligence. According to Cohen's criteria, this is considered a large effect size.

Discussion

We found pretend play to be significantly related to measures of subjective well-being and coping, constructs important for children's overall functioning. Specifically, among the concurrent relationships, the expression of affect in play related to a positive mood in daily life, and imagination and organization in play related to coping. These findings suggest that better players have greater positive affect in daily life and better coping ability. In addition, we obtained supportive evidence for the predictive power of play ability, as baseline imagination in play significantly related to coping skills over the eighteen-month period. Results also provide support for the stability of play skills, especially the cognitive components. Finally, positive mood on the PANAS-C related to coping ability, so that children who reported having greater positive affect were also able to generate a greater number of coping responses.

In addition, there were a number of longitudinal findings, such as the relationships between affect expression in play and positive mood and between orga-

nization and coping ability, that approached significance. Such findings suggest that these relationships should be explored with a larger sample. We also noted that verbal ability did not relate to play skills, and all significant relationships remained significant when we controlled for verbal ability. This result suggests that play enhances development and functioning separate from intelligence.

Current Play, Subjective Well-Being, and Coping

Girls who demonstrated a greater amount of affect in their play narratives reported having greater positive moods in the previous two weeks. Although our study is the first to examine the relationship between pretend play and self-reported positive mood, this result is consistent with the research of Seja and Russ (1998), which found that children who expressed more emotion in play demonstrated more positive emotion in their daily behavior, as rated by their parents. Similarly, Grossman-McKee (1990) found that children who demonstrated greater affect in their play had fewer pain complaints and anxiety than their less expressive counterparts. We should note that all findings are correlational in nature and, therefore, we cannot presume cause-and-effect relationships. Nonetheless, our findings support existing literature and suggest important implications: girls who are able to think about emotion-laden content and express both positive and negative affect in their play also demonstrate greater positive affect in daily living. Our study supports the concept that through play, children practice thinking, feeling, and expressing positive and negative emotion, which translates to more positive emotion overall.

Also, girls who demonstrated greater imagination and organization in their play generated a greater number of coping responses, which is consistent with previous studies (Russ, Robins, and Christiano 1999; Goldstein and Russ 2001). Such replication of findings adds to the validity and strength of the APS-BR and the School Coping Scale and supports the link between imagination in play and coping ability. We theorize that proficiency in divergent thinking contributes to the relationship between play and coping, so that children who demonstrate imagination in their play also generate creative ideas and explore a variety of solutions to problems. Children who are able to generate creative ideas by exploring many possible solutions are also able to generate a greater number of coping solutions to potentially stressful situations. Theoretically, divergent-thinking ability allows for imaginative and creative play, in addition to more effective coping.

Organization, the other cognitive component in play, also related to coping. Our results indicate that girls who had more organization in play stories also

generated a greater number of coping responses. The finding makes theoretical sense. Children who organize their play—which means they can create a complex story with a beginning, a middle, and an end—can also cope with problems. The ability to plan and execute a story in an integrated, structured way is likely beneficial for generating effective coping solutions.

Next, inconsistent with our hypotheses, the cognitive components of play did not significantly relate to life satisfaction. However, life satisfaction was significantly negatively correlated with affect expression in play. We did not expect this finding because evidence suggests greater expression of affect in play is associated with adaptive skills, such as the ability to regulate emotion and control affect (Hoffman and Russ 2012). Based on such previous findings, we proposed that children with these adaptive abilities would also be more satisfied with life. However, potential issues with the MLSS-C instrument may have had an impact on the finding regarding this theorized relationship. The relationship between play skills and the MSLSS-C may be curvilinear, so that the best players are those who rated themselves moderately, but not perfectly, satisfied with life. In other words, perhaps rating school as "sometimes pleasing to me" is a more adaptive, realistic way of viewing school than rating school as "always pleasing to me." To recognize school as mostly, but not perfectly, pleasing may be the most satisfying, adaptive way of viewing school. We need more research with a larger sample on the relationship between life satisfaction and play skills.

Longitudinal Predictions

We explored the predictive power of play by examining the relationships between play ability at the beginning of our study and the subjective well-being and coping measures recorded approximately eighteen months later. We found that imagination in play at baseline significantly related to the frequency of coping responses at the end of the study. We believe this relationship, mediated by divergent thinking, is maintained over time, so that girls with more imagination in their play also generated more solutions to challenging situations eighteen months later. Relationships between organization in play and coping and between affect in play and positive mood approached significance but were not statistically significant—perhaps due to the small sample.

Stability of Play

Our results indicated statistically significant relationships between several components of play over eighteen months, specifically with regard to the cognitive

components of play, imagination, and organization. The magnitudes of these correlation coefficients are considered large effect sizes according to Cohen's (1988) criteria and are consistent with values observed in other constructs deemed stable over time, such as aggression (Tomada and Schneider 1997), antisocial and delinquent child behavior (Loeber 1982), and creativity (Kogan and Pankove 1972).

Interestingly, the frequency of affect score at the beginning of the study did not significantly correlate with its measure at the end of the study. This suggests the affective component of play may be more fluid and changing than the more stable cognitive components. The primary longitudinal study addressing the stability of play ability found significant correlations between the beginning and ending affect scores (Russ, Robins, and Christiano 1999). However, that particular study used the original video-taped version of the Affect in Play Scale, which includes a more extensive affective scoring system that distinguishes positive from negative affect. Their findings indicated that positive affect was stable over time because the baseline score correlated significantly with its respective outcome score, $r = .51$, $p < .01$. However, the baseline negative affect score did not significantly correlate with the outcome score. Thus, scoring differences between the APS-BR and the video-taped APS may be responsible for differences in our findings from previously published research.

Limitations and Future Directions

We note several limitations to our study. First, our sample size was small. Nevertheless, the magnitudes of the correlations for the follow-up sample were of medium effect sizes and suggest further research is warranted. Second, the generalizability of the findings is limited to female children who attend an upper middle-class, private school. However, there is no reason to expect the findings would be different for boys or for students of a different socioeconomic status.

There were also issues with the measures that may have had an impact on the findings. First, the APS-BR is still a new measure for assessing play and seems to be less sensitive than the video-taped version. Specifically, with regard to assessing affect expression in play, the original APS may be more effective at differentiating between positive and negative affect in play and may subsequently provide a more accurate indication of the stability of affect expression in play. Second, although deemed valid assessments of positive affect and life satisfaction, the PANAS-C and MSLSS-C may not be particularly sensitive measures for young children. Also, given that the present study used adapted versions of these

measures, validity estimates may not be applicable. Regarding coping ability, the School Coping Scale assesses the capacity to generate solutions to problems but not actual coping behavior in a situation. Finally, we controlled for verbal intelligence at the eighteen-month time point using WISC-IV scores measured at the beginning of the study. However, verbal IQ at this age is considered stable (Hopkins and Bracht 1975).

The results of our study suggest a variety of directions worth further research. A better understanding of life satisfaction in children would be beneficial. Validation of the adapted version of the MSLSS-C or an additional instrument to ensure that life satisfaction can be appropriately and effectively measured in young children is essential to understanding fully the relationship of life satisfaction to play and other relevant constructs.

Our study yields important implications for children's overall well-being. Children who are able to express emotion, both positive and negative, in their play generally feel happier, more energetic, and more cheerful than children who are more constricted in their play. Further, our findings indicate that children who are more organized and more imaginative in play are more effective at coping than those who express less organization and imagination. Early pretend play predicted coping skills and positive affect in daily life over eighteen months. These findings add to the growing evidence that pretend play has an important role in child development.

References

Burstein, Sam, and Donald Meichenbaum. 1979. "The Work of Worrying in Children Undergoing Surgery." *Journal of Abnormal Child Psychology* 7:121–32.

Carson, David K., Mark T. Bittner, Bruce R. Cameron, Donna M. Brown, and Sonya S. Meyer. 1994. "Creative Thinking as a Predictor of School-Aged Children's Stress Response and Coping Abilities." *Creativity Research Journal* 7:145–58.

Christiano, Beth Alexis, and Sandra W. Russ. 1996. "Play as a Predictor of Coping and Distress in Children During an Invasive Dental Procedure." *Journal of Child Clinical Psychology* 25:130–8.

Cordiano, Tori J. Sacha, Sandra W. Russ, and Elizabeth J. Short. 2008. "Development and Validation of the Affect in Play Scale-Brief Rating Version (APS-BR)." *Journal of Personality Assessment* 90:52–60.

Cronbach, Lee. 1951. "Coefficient Alpha and the Internal Structure of Tests." *Psychometrika* 16:297–334.

Cicchetti, Domenic V. 1994. "Guidelines, Criteria, and Rules of Thumb for Evaluating Normed and Standardized Assessment Instruments in Psychology." *Psychological Assessment* 6:284–90.

Cohen, David. 2006. *The Development of Play.* 3rd ed.

Cohen, Jacob. 1988. *Statistical Power Analysis for the Behavioral Sciences.* 2nd ed.

Curry, Sandra L., and Sandra W. Russ. 1985. "Identifying Coping Strategies in Children." *Journal of Clinical Child Psychology* 14:61–69.

Dansky, Jeffrey. 1980. "Make-Believe: A Mediator of the Relationship Between Play and Associative Fluency." *Child Development* 51:576–79.

Diener, Ed, Eunkook M. Suh, Richard E. Lucas, and Heidi L. Smith. 1999. "Subjective Well-Being: Three Decades of Progress." *Psychological Bulletin* 125:276–302.

Fein, Greta G. 1981. "Pretend Play in Childhood: An Integrative Review." *Child Development* 52:1095–118.

———. 1987. "Pretend Play: Creativity and Consciousness." In *Curiosity, Imagination, and Play: On the Development of Spontaneous Cognitive and Motivational Processes*, edited by Dietmar Görlitz and Joachim F. Wohlwill, 281–304.

Fisher, Edward P. 1992. "The Impact of Play on Development: A Meta-Analysis." *Play & Culture* 5:159–81.

Folkman, Susan, and Richard S. Lazarus. 1980. "An Analysis of Coping in a Middle-Aged Community Sample." *Journal of Health and Social Behavior* 21:219–39.

Freedheim, Donald K., and Sandra W. Russ. 1992. "Psychotherapy with Children." In *Handbook of Clinical Child Psychology,* 2nd ed., edited by Clarence Eugene Walker and Michael C. Roberts, 765–81.

Goldstein, Amy B., and Sandra W. Russ. 2000–2001. "Understanding Children's Literature and its Relationship to Fantasy Ability and Coping." *Imagination, Cognition, and Personality* 20:105–26.

Grossman-McKee, Anna. 1989. "The Relationship Between Affective Expression in Fantasy Play and Pain Complaints in First and Second Grade Children." PhD diss., Case Western Reserve University.

Haight, Wendy, James Black, Teresa Ostler, and Kathryn Sheridan. 2006. "Pretend Play and Emotion Learning in Traumatized Mothers and Children." In *Play = Learning: How Play Motivates and Enhances Children's Cognitive and Social-Emotional Growth*, edited by Dorothy G. Singer, Roberta Michnick Golinkoff, and Kathy Hirsh-Pasek, 209–30.

Hartley, Ruth E., Lawrence K. Frank, and Robert M. Goldenson. 1952. *Understanding Children's Play*.

Hoffmann, Jessica, and Sandra Russ. 2012. "Pretend Play, Creativity, and Emotion Regulation." *Psychology of Aesthetics, Creativity, and the Arts* 6:175–84.

Hopkins, Kenneth, and Glenn Bracht. 1975. "Ten-Year Stability of Verbal and Nonverbal IQ Scores." *American Educational Research Journal* 12:469–77.

Huebner, E. Scott. 1991. "Further Validation of the Students' Life Satisfaction Scale: The Independence of Satisfaction and Affect Ratings." *Journal of Psychoeducational Assessment* 9:363–8.

———. 1994. "Preliminary Developmental and Validation of a Multidimensional Life Satisfaction Scale for Children." *Psychological Assessment* 6:149–58.

Huebner, E. Scott, James E. Laughlin, Chris Ash, and Rich Gilman. 1998. "Further Validation of the Multidimensional Students' Life Satisfaction Scale." *Journal of Psychoeducational Assessment* 16:118–34.

Huebner, E. Scott, and Tammy Dew. 1996. "The Interrelationships of Positive Affect, Negative Affect, and Life Satisfaction in an Adolescent Sample." *Social Indicators Research* 38:129–37.

Kogan, Nathan, and Ethel Pankove. 1972. "Creative Ability over a Five-Year Span." *Child Development* 43:427–42.

Land, Kenneth C., Vicki L. Lamb, Sarah O. Meadows, and Ashley Taylor. 2007. "Measuring Trends in Child Well-Being: An Evidence-Based Approach." *Social Indicators Research* 80:105–32.

Laurent Jeff, Salvatore J. Catanzaro, Thomas E. Joiner, Karen D. Rudolph, Kirsten I. Potter, Sharon Lambert, Lori Osborne, and Tamara Gathright. 1999. "A Measure of Positive and Negative Affect for Children: Scale Development and Preliminary Validation." *Psychological Assessment* 11:326–38.

Lieberman, Josepha Nina. 1977. *Playfulness: Its Relationship to Imagination and Creativity.*

Lee, Adeline, and Mark Oakley Browne. 2008. "Subjective Well-Being, Sociodemographic Factors, Mental and Physical Health of Rural Residents." *The Australian Journal of Rural Health* 16:290–96.

Loeber, Rolf. 1982. "The Stability of Antisocial and Delinquent Child Behavior: A Review." *Child Development* 53:1431–46.

Monat, Alan, and Richard Lazarus. 1977. "Introduction: Stress and Coping—Some Current Issues and Controversies." In *Stress and Coping: An Anthology*, edited by Alan Monat and Richard Lazarus, 1–11.

Moore, Melissa, and Sandra Russ. 2008. "Follow-up of a Pretend Play Intervention: Effects on Play, Creativity, and Emotional Processes in Children." *Creativity Research Journal* 20:427–36.

Murphy, Lois Barclay. 1962. *The Widening World of Childhood.*

Russ, Sandra W. 1988. "Primary Process Thinking, Divergent Thinking, and Coping in Children." *Journal of Personality Assessment* 52:539–48.

———. 1993. *Affect and Creativity: The Role of Affect and Play in the Creative Process.*

———. 2003. *Play in Child Development and Psychotherapy: Towards Empirically Supported Practice.*

Russ, Sandra W., and Anna Grossman-McKee. 1990. "Affective Expression in Children's Fantasy Play, Primary Process Thinking on the Rorschach, and Divergent Thinking." *Journal of Personality Assessment* 54:756–71.

Russ, Sandra W., Andrew L. Robins, and Beth A. Christiano. 1999. "Pretend Play: Longitudinal Prediction of Creativity and Affect in Fantasy in Children." *Creativity Research Journal* 12:129–39.

Russ, Sandra W., and Ethan D. Schafer. 2006. "Affect in Fantasy Play, Emotion in Memo-

ries, and Divergent Thinking." *Creativity Research Journal* 18:347–54.
Saltz, Eli, David Dixon, and James Johnson. 1977. "Training Disadvantaged Preschoolers on Various Fantasy Activities: Effects on Cognitive Functioning and Impulse Control." *Child Development* 48:367–80.
Seja, Astrida, and Sandra Russ. 1998. *Children's Fantasy Play, Emotional Understanding and Parents' Reports of Children's Daily Behavior.* Poster session presented at the Great Lakes Regional Conference on Child Health Psychology, Louisville, KY.
Singer, Dorothy G., and Jerome L. Singer. 1990. *The House of Make-Believe: Children's Play and the Developing Imagination.*
Tomada, Giovanna, and Barry Schneider. 1997. "Relational Aggression, Gender, and Peer Acceptance: Invariance across Culture, Stability over Time, and Concordance among Informants." *Developmental Psychology* 33:601–9.
Udwin, Orlee. 1983. "Imaginative Play Training as an Intervention Method with Institutionalised Preschool Children." *British Journal of Educational Psychology* 53:32–39.
Watson, David, Lee A. Clark, and Auke Tellegen. 1988. "Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales." *Journal of Personality and Social Psychology* 54:1063–70.
Youngblade, Lise M., and Judy Dunn. 1995. "Individual Differences in Young Children's Pretend Play with Mother and Sibling: Links to Relationships and Understanding of Other People's Feelings and Beliefs." *Child Development* 66:1472–92.